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Attorney Docket No. IMMR-020/03US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application Louis B. ROSENBERG et al.

Serial No.: 09/934,739

Examiner: Paul A. Bell

Filed: August 22, 2001

Art Unit: 2675

Confirmation No.: 9387

For: **INTERACTIONS BETWEEN SIMULATED OBJECTS WITH FORCE
FEEDBACK**

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Enclosed is an Information Disclosure Statement and accompanying Form PTO/SB/08A for the above-identified patent application.

- ☐ In accordance with 37 C.F.R. §1.97(b), no additional fee for submission of the IDS is required.
- ☒ In accordance with 37 C.F.R. §1.97(c), also enclosed is:
 - ☒ the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p); or
 - ☐ a statement as specified in 37 C.F.R. §1.97(e).
- ☐ In accordance with 37 C.F.R. §1.97(d), a statement as specified in 37 C.F.R. §1.97(e) and the fee of \$180.00 as set forth in 37 C.F.R. §1.17(p) are also enclosed.
- ☐ Check No. ___ in the amount of \$___ for the total fee is attached.
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The Commissioner is hereby authorized to charge any appropriate fees under 37 C.F.R. §§1.16, 1.17, and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 50-1283.

Dated: July 12, 2004

Cooley Godward LLP
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Reston, VA 20190-5656
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Respectfully submitted,
COOLEY GODWARD LLP



By: _____

Erik B. Milch
Reg. No. 42,887



Attorney Docket No. IMMR-020/03US

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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**INFORMATION DISCLOSURE STATEMENT
UNDER 37 C.F.R. §1.97(c)**

In accordance with the duty of disclosure set forth in 37 C.F.R. §1.56,
Applicant(s) hereby submits the following information in conformance with 37 C.F.R.
§§1.97 and 1.98.

- ☒ Pursuant to 37 C.F.R. §1.98, a copy of each document cited in the attached Form PTO/SB/08A (1 of 2) is provided on the enclosed CD.
- ☒ No copies of the publications listed on the attached Form PTO/SB/08A (2 of 2) are being provided pursuant to 37 C.F.R. §1.98(d) because the publications were previously cited by or submitted to the Office in prior Application Serial Nos. 09/433,657, filed November 3, 1999 (now U.S. Patent No. 6,366,272), 08/664,086 (now U.S. Patent No. 6,028,593), 08/566,282 (now U.S. Patent No. 5,734,373), and/or 08/571,606 (now U.S. Patent No. 6,219,032), to which the above-identified application claims priority under 35 U.S.C. §120.
- ☐ No copies of any U.S. patents or U.S. patent application publications listed on the attached Form PTO/SB/08A are being provided pursuant to 37 C.F.R. §1.98 because this application was filed after June 30, 2003.
- ☐ Publication(s) ___ listed on the attached Form PTO/SB/08A were cited in a foreign search or examination report corresponding to ___ application serial no. ___ and mailed on ___.
- ☐ Enclosed is a copy of a non-English publication(s) ___. Pursuant to §609 of the M.P.E.P., Applicant submits the attached foreign search or examination report, which cites such non-English language publication(s).

- ☐ Enclosed is a copy of a non-English publication(s) _____. English language publication ____ (copy enclosed) claims priority from this non-English publication.
- ☐ Enclosed is an explanation of non-English publication(s) ____ for which an English translation is not available.
- ☐ Enclosed is an English translation of non-English publication(s) ____ cited in the attached Form PTO/SB/08A.
- ☐ Enclosed is a copy of pending patent Application Serial No. _____.

This Information Disclosure Statement is filed after the period specified in 37 C.F.R. § 1.97(b), but before the mailing of:

- ☒ a final action under 37 C.F.R. §1.113;
- ☐ a notice of allowance under 37 C.F.R. §1.311; or
- ☐ an action that otherwise closes prosecution in this application.

In accordance with 37 C.F.R. §1.97(c) also enclosed is:

- ☒ Fee under 37 C.F.R. §1.17(p) in the amount of \$180.00; or
- ☐ Statement as specified in 37 C.F.R. §1.97(e):
 - ☐ Each item of information contained in the Information Disclosure Statement cited herein was first cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing date of the Information Disclosure Statement; or
 - ☐ No item of information contained in the Information Disclosure Statement submitted herewith was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned, having made a reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in 37 C.F.R. §1.56(c) more than three months prior to the filing date of the Information Disclosure Statement.

It is respectfully requested that the Examiner consider the above-noted information and return an initialed copy of the attached Form PTO/SB/08A to the undersigned.

Dated: July 12, 2004

Cooley Godward LLP
One Freedom Square
Reston Town Center
11951 Freedom Drive
Reston, Virginia 20190-5656
(703) 456-8000
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Respectfully submitted,
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By: _____



Erik B. Milch
Reg. No. 42,887

Substitute for form 1449A/PTO

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet **1** of **3****Complete if Known**

Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Paul A. Bell
Attorney Docket Number	IMMR020/03US

RECEIVED**JUL 15 2004****Technology Center 2600****U.S. PATENT DOCUMENTS**

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		6,422,941	7/23/2002	Thorner et al.	
		6,160,489	12/12/2000	Perry et al.	
		6,111,577	8/29/2000	Zilles et al.	
		5,690,582	11/25/1997	Ulrich et al.	
		5,575,761	11/19/1996	Hajianpour	
		5,437,607	8/1/1995	Taylor	
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		5,186,695	2/16/1993	Mangseth et al.	
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		5,022,384	6/11/1991	Freels	
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		4,464,117	8/7/1984	Foerst	
		4,333,070	6/1/1982	Barnes	
		4,262,549	4/21/1981	Schwellenbach	
		4,127,752	11/28/1978	Lowthorp	
		2,972,140	2/14/1961	Hirsch	

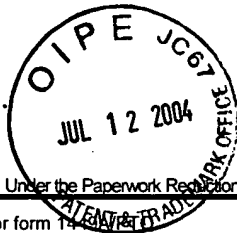
Examiner Initials*	Cite No. ¹	Foreign Patent Document			Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		JP	H2-185278		7/19/1990	Taito Corporation	
		JP	H4-8381		1/13/1992	Epoch Co. and Key- Planning Co.	
		JP	H7-24147		1/27/1995	Sega Corporation	
		JP	H5-192449		8/3/1993	Taito Corporation	

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¹ Applicant's unique citation designation number (optional). ² Kind Codes of U.S. Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet **2** of **3**

Complete if Known

Application Number	09/934,739
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Attorney Docket Number	IMMR020/03US

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OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		PATRICK, "Design, Construction, and Testing of a Fingertip Tactile Display for Interaction with Virtual and Remote Environments," <i>Master of Science Thesis</i> , MIT, Aug. 1990, archived Nov. 8, 1990.
		CALDER, "Design of A Force-Feedback Touch-Introducing Actuator For Teleoperator Robot Control," <i>Bachelor of Science Thesis</i> , MIT, May 1983, archived June 23, 1983.
		WIKER, "Teletouch Display Development: Phase 1 Report," <i>Technical Report 1230</i> , Naval Ocean Systems Center, San Diego, July 1988.
		BLISS, "Optical-to-Tactile Image Conversion for the Blind," <i>IEEE Transactions on Man-Machine Systems</i> , Vol. MMS-11, No. 1, March 1970.
		JOHNSON, "Shape-Memory Alloy Tactile Feedback Actuator," <i>Armstrong Aerospace Medical Research Laboratory</i> , AAMRL-TR-90-039, August, 1990.
		KONTARINIS et al., "Tactile Display of Vibratory Information in Teleoperation and Virtual Environments," <i>PRESENCE</i> , 4(4):387-402, Harvard Univ., 1995.
		AUKSTAKALNIS et al., "Silicon Mirage: The Art and Science of Virtual Reality," ISBN 0-938151-82-7, pp. 129-180, 1992.
		EBERHARDT et al., "Inducing Dynamic Haptic Perception by The Hand: System Description and Some Results," <i>DSC-Vol. 55-1, Dynamic Systems and Control: Volume 1</i> , ASME 1994.
		GOBEL et al., "Tactile Feedback Applied to Computer Mice," <i>International Journal of Human-Computer Interaction</i> , Vol. 7, No. 1, pp. 1-24, 1995.
		PIMENTEL et al., "Virtual Reality: through the new looking glass," 2 nd Edition; McGraw-Hill, ISBN 0-07-050167-X, pp. 41-202, 1994.
		"Cyberman Technical Specification," <i>Logitech Cyberman SWIFT Supplement to Logitech Mouse Technical Reference and Programming Guide</i> , 4/5/1994.
		OUHYOUNG et al., "The Development of A Low-Cost Force Feedback Joystick and Its Use in the Virtual Reality Environment," <i>Proceedings of the Third Pacific Conference on Computer Graphics and Applications, Pacific Graphics '95</i> , Seoul, Korea, 21-24 August 1995.
		KACZMAREK et al., "Tactile Displays," <i>Virtual Environment Technologies</i> , Chap. 9, pp. 349-414.
		LAKE, "Cyberman from Logitech," at http://www.ibiblio.org/GameBytes/issue21/greviews/cyberman.html , 1994.
		"Component Maintenance Manual With Illustrated Parts List, Coaxial Control Shaker Part no. C-25502," Safe Flight Instrument Corporation, Revised 28 January 2002 (3 pages).

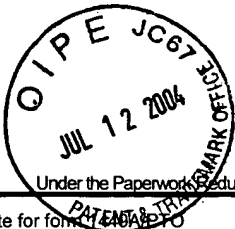
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Sheet 3 of 3

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Application Number	09/934,739
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First Named Inventor	Louis B. Rosenberg
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Examiner Name	Paul A. Bell
Attorney Docket Number	IMMR020/03US

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OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS

Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		"Technical Manual Overhaul Instructions With Parts Breakdown, Coaxial Control Shaker Part no. C-25502," Safe Flight Instrument Corporation, Revised 15 July 1980 (23 pages).
		SCANNELL, "Taking a Joystick Ride," <i>Computer Currents</i> , Boston Edition, Vol. 9, No. 11, November 1994
		YAMAKITA et al., "Tele-Virtual Reality of Dynamic Mechanical Model," <i>Proceedings of the 1992 IEEE/RSJ International Conference on Intelligent Robots and Systems</i> , Raleigh, NC, July 7-10, 1992
		NOLL, "Man-Machine Tactile," <i>SID Journal</i> , July/August 1972 Issue.
		ROSENBERG, "Virtual Fixtures: Perceptual Overlays Enhance Operator Performance In Telepresence Tasks," <i>Ph.D. Dissertation</i> , Stanford University, June 1994.

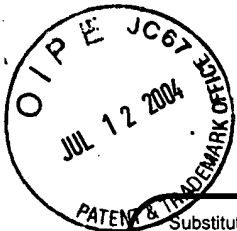
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

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Sheet **1** of **14****Complete if Known**

Application Number	09/934,739
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		6,111,577	8/2000	Zilles et al.	
		6,104,158	8/2000	Jacobus et al.	
		6,088,019	7/2000	Rosenberg	
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		5,771,037	6/1998	Jackson	
		5,769,640	6/1998	Jacobus et al.	
		5,767,839	6/1998	Rosenberg	
		5,760,764	6/1998	Martinelli	
		5,757,358	5/1998	Osga	
		5,755,577	5/1998	Gillio	
		5,754,023	5/1998	Roston et al.	
		5,745,715	4/1998	Pickover et al.	
		5,742,278	4/1998	Chen et al.	

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Sheet **2** of **14****Complete if Known**

Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
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		5,739,811	4/1998	Rosenberg et al.	
		5,736,978	4/1998	Hasser et al.	
		5,734,373	3/1998	Rosenberg et al.	
		5,731,804	3/1998	Rosenberg	
		5,721,566	2/1998	Rosenberg et al.	
		5,714,978	2/1998	Yamanaka et al.	
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		5,694,013	12/1997	Stewart et al.	
		5,691,898	11/1997	Rosenberg et al.	
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		5,643,087	7/1997	Marcus et al.	
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		5,631,861	5/1997	Kramer	
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		5,623,642	4/1997	Katz et al.	
		5,623,582	4/1997	Rosenberg	
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		5,591,924	1/1997	Hilton	
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		5,583,478	12/1996	Renzi	
		5,577,981	11/1996	Jarvik	
		5,576,727	11/1996	Rosenberg et al.	
		5,572,639	11/1996	Grant	
		5,570,111	10/1996	Barrette et al.	
		5,565,888	10/1996	Selker	
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		5,565,840	10/1996	Thomer et al.	
		5,551,701	9/1996	Bouton et al.	
		5,550,562	8/1996	Aoki et al.	
		5,530,455	6/1996	Gillick et al.	

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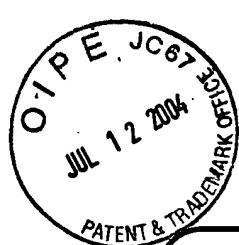
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Sheet **3** of **14**

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Attorney Docket Number	IMMR020/03US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,526,480	6/1996	Gibson	
		5,513,100	4/1996	Parker et al.	
		5,512,919	4/1996	Araki	
		5,482,051	1/1996	Reddy et al.	
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		5,471,571	11/1995	Smith et al.	
		5,467,763	11/1995	McMahon et al.	
		5,459,382	10/1995	Jacobus et al.	
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		5,417,696	5/1995	Kashuba et al.	
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		5,399,091	3/1995	Mitsumoto	
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		5,397,323	3/1995	Taylor et al.	
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		5,386,507	1/1995	Teig et al.	
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		5,379,663	1/1995	Hara	
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		5,355,148	10/1994	Anderson	
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		5,296,871	3/1994	Paley	
		5,296,846	3/1994	Ledley	

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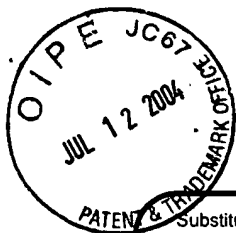
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet **4** of **14**

Complete if Known

Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Paul A. Bell
Attorney Docket Number	IMMR020/03US

U.S. PATENT DOCUMENTS					
Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,289,273	2/1994	Lang	
		5,286,203	2/1994	Fuller et al.	
		5,275,565	1/1994	Moncrief	
		5,264,768	11/1993	Gregory et al.	
		5,262,777	11/1993	Low et al.	
		5,259,894	11/1993	Sampson	
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		5,235,868	8/1993	Culver	
		5,230,623	7/1993	Guthrie et al.	
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		5,132,672	7/1992	Clark	
		5,131,844	7/1992	Marinaccio et al.	
		5,128,671	7/1992	Thomas, Jr.	

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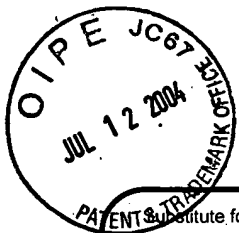
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Sheet **5** of **14****Complete if Known**

Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Paul A. Bell
Attorney Docket Number	IMMR020/03US

U.S. PATENT DOCUMENTS

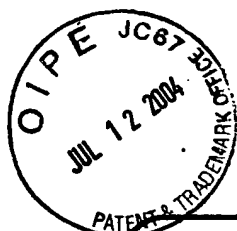
Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		5,126,948	6/1992	Mitchell et al.	
		5,116,051	5/1992	Moncrief et al.	
		5,107,262	4/1992	Cadoz et al.	
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		4,868,549	9/1989	Affinito et al.	
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Sheet **6** of **14****Complete if Known**

Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Paul A. Bell
Attorney Docket Number	IMMR020/03US

U.S. PATENT DOCUMENTS

Examiner	Cite No. ¹	Document Number Number Kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		4,811,608	3/1989	Hilton	
		4,803,413	2/1989	Kendig et al.	
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		4,593,470	6/1986	Davies	
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		4,114,882	9/1978	Mau	

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Sheet **7** of **14****Complete if Known**

Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Paul A. Bell
Attorney Docket Number	IMMR020/03US

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		3,944,798	3/1976	Eaton	
		3,919,691	11/1975	Noll	
		3,890,958	6/1975	Fister et al.	
		3,875,488	4/1975	Crocker et al.	
		3,795,150	3/1974	Eckhardt	
		3,531,868	10/1970	Stevenson	
		3,490,059	1/1970	Paulsen et al.	
		2,906,179	9/1959	Bower	

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		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		WO	9720305		6/1997		
		WO	9719440		5/1997		
		WO	9712357		4/1997		
		WO	9712337		4/1997		
		WO	9642078		12/1996		
		WO	9628777		9/1996		
		WO	9622591		7/1996		
		WO	9616397		5/1996		
		WO	9532459		11/1995		
		WO	9520788		8/1995		
		WO	9520787		8/1995		
		WO	9510080		4/1995		
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		WO	9200559		1/1992		
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Sheet **8** of **14****Complete if Known**

Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Paul A. Bell
Attorney Docket Number	IMMR020/03US

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		Country Code ³	Number ⁴	Kind Code ⁵ (if known)			
		EP	0607580	A1	7/1994		

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Sheet 9 of 14

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Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
Art Unit	2675
Examiner Name	Paul A. Bell
Attorney Docket Number	IMMR020/03US

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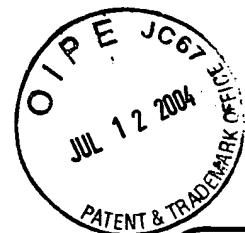
Examiner Initials *	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
		"Foot-Operated Mouse," IBM Technical Disclosure Bulletin, Apr. 1986, vol. 28, No. 11.
		"High Performance Model of the Immersion Probe," Immersion-Probe-MD.TM., Immersion Human Interface Corporation.
		"Proceedings of the IFIP Congress 65," International Federation for Information Processing, Information Processing 1965, vol. 3, New York, May 24-29, pp. 506.
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		Application Number	09/934,739		
		Filing Date	August 22, 2001		
		First Named Inventor	Louis B. Rosenberg		
		Art Unit	2675		
		Examiner Name	Paul A. Bell		
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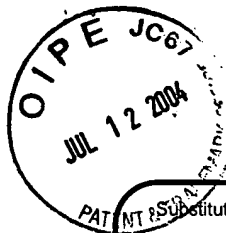
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		Application Number	09/934,739		
		Filing Date	August 22, 2001		
		First Named Inventor	Louis B. Rosenberg		
		Art Unit	2675		
		Examiner Name	Paul A. Bell		
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Application Number	09/934,739
Filing Date	August 22, 2001
First Named Inventor	Louis B. Rosenberg
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Attorney Docket Number	IMMR020/03US

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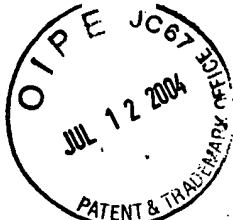
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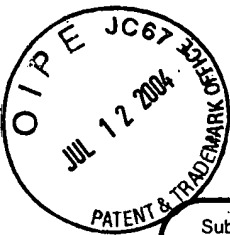
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Art Unit	2675
Examiner Name	Paul A. Bell
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